

# COMMITTEE ON GOVERNMENT REFORM

*Subcommittee on Energy and Resources*

DARRELL ISSA, CHAIRMAN



## Oversight Hearing:

*“Can the U.S. Electric Grid Take Another Hot Summer?”*

**July 12, 2006, 2:00pm  
Rayburn House Office Building  
Room 2154**

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## ***BRIEFING MEMORANDUM***

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### **Summary:**

In May, The Federal Energy Regulatory Commission (FERC) released its *Summer Energy Market Assessment 2006*, which identified four major geographic areas with potentially critical supply scarcity issues. The areas are: Southern California; Long Island, New York; Ontario, Canada, which affects the US states in the Great Lakes region; and Southwest Connecticut. Each of these areas is particularly vulnerable to a hot summer and unplanned outages from local generators or import-related transmission of power from other regions. Each of the potential US trouble spots was also identified in FERC summer assessments in 2004 and 2005.

Additionally, each of these areas is managed by an Independent System Operator (ISO), which is an independent, federally regulated entity established to coordinate regional transmission in a non-discriminatory manner and ensure the safety and reliability of the electric system. ISOs also oversee wholesale or bulk electricity markets and are involved in regional planning activities.

The potential for rolling blackouts and supply shortages in particular regions would have spillover effects and greater implications for the nation’s electricity system. Furthermore, supply shortages would have a significant negative economic impact, especially taking into account that prices for power are already high.

This hearing will examine FERC’s summer assessment as well as those of the ISOs for

the affected regions. In addition, the hearing will explore the steps FERC and the ISOs are taking to meet the challenges presented this summer and what they are doing to address problems over the long term.

### ***FERC's Summer Energy Market Assessment 2006***

FERC's *Summer Energy Market Assessment 2006* predicts potential blackouts and high electric bills for Southern California; Long Island, New York; Ontario, Canada, which affects the US states in the Great Lakes region; and Southwest Connecticut. These areas have been of concern for the last several years, demonstrated by the fact that these areas have been in previous summer assessments by FERC. The following sections summarize FERC's assessment and the challenges presented in the four "trouble spot" areas identified.

#### **Southern California**

Because of tight reserve margins, Southern California is very vulnerable both to peak demand from periods of heat, and to unplanned outages of generation or transmission capacity needed to maintain imports of power. This area relies on significant amounts of imported power, which will keep transmission lines in southern California heavily loaded much of the time. For example, the California Independent System Operator (CAISO) expects typical peak demand in Southern California during the summer to be about 27,300 MW with peaks under high load scenarios of more than 29,500 MW. Local generation, adjusting for likely outages, totals a little less than 20,000 MW. At the peak, the CAISO expects 10,100 MW to be imported – or fully one-third of Southern California's supply.

Consequently, FERC's Summer Assessment, which is consistent with the North American Electric Reliability Council (NERC) assessment, is that if loads or unexpected outages are high, the CAISO will call on more imports to maintain sufficient operating reserve margins. However, if Southern California has sustained periods of high temperatures coupled with the unexpected loss of local generation or transmission, the CAISO may need to shed load through rolling blackouts.

The California Public Utilities Commission mandated resource adequacy requirements for all Load Serving Entities within their jurisdiction. Load Serving Entities, which provide electric service to end-users and whole customers, are required to procure energy resources to meet their 90 percent of summer peak demand one year in advance. In addition, Load Serving Entities are now required to procure energy resources equal to at least 115 percent of forecasted monthly peak load. Thus, extending forward contracting reduces spot price effects on customers.

### **Southwestern Connecticut**

Southwestern Connecticut will not have enough local generation and import transmission capacity to meet expected demand and reliability requirements. Transmission capacity for imports now operates at its limit and transmission capacity with Southwest Connecticut is insufficient to support local generation. In addition, no significant generation or transmission capacity has been added since 2004; current transmission upgrades will not be completed until 2009.

Southwestern Connecticut is very vulnerable to extended periods of high temperatures and unplanned outages of local generation or imported transmission. Therefore, the lack of investment in basic infrastructure within the regions creates probable conditions that southwestern Connecticut will experience expensive electric prices this summer, but not rolling blackouts.

### **Long Island/ New York City**

New York City's recent investment in critical generation infrastructure appears to have relieved some reliability concerns. However, the power plants are gas-fired and due to high natural gas prices, the market price for electricity is expected to remain relatively expensive in the city, though reserves appear adequate. However, Long Island has supply-demand balances that remain very tight.

Long Island is vulnerable to extended periods of heat and unplanned outages. Therefore, when supply is tight, such as during an extended period of heat, prices for electricity will be extremely high. In addition, the New York ISO's scarcity pricing program, implemented in 2003, is likely to continue to generate high prices at those times when tight markets means reserves are being used for energy.

### **Ontario, Canada**

Ontario relies on transmission imports from New York, Michigan, and the Province of Quebec to meet its demand. Generation and transmission capacity have increased, slightly, but this has not made up for the increase in demand. Therefore, Ontario, like most of North America, is vulnerable to extended periods of high temperature and unexpected outages. Further, Ontario is dependent on imports of power, and it could be subject to import restrictions if there is a heat-wave in the northeastern United States.

Given its geographical location, if Ontario has a need for emergency energy it could have a negative effect on the supply in New York and the Midwest, thus increasing the price to consumers in those regions. In addition, last summer Ontario disrupted imports frequently, causing a variety of commercial problems. Ontario's Independent Electricity System Operator has implemented a day-ahead commitment process which may take care of this issue for the upcoming summer.

## **Common Structural Problems**

These regions each suffer from structural, not just seasonal, energy problems. The regions demonstrate the difficulties that the nation is experiencing in meeting its electricity reliability needs. Common challenges include: funding, siting and construction of new generation and transmission capacity; regulatory uncertainty; and volatile fuel supplies and prices.

The present transmission system was developed to fit the regulatory framework established in the 1920 Federal Power Act, under which utilities served local customers in a monopoly service territory. The transmission system was not designed to handle large power transfers between utilities and regions. Enactment of the Energy Policy Act of 1992 created tension between the existing transmission system and the Act's new regulatory mandates: the new competitive generation market encouraged wholesale, interstate power transfers across an older grid system that was designed to protect local reliability, not bulk power transfers.

### **Demand Outstrips Transmission Capacity**

According to the Congressional Research Service (CRS) report, *Electric Reliability: Options for Electric Transmission Infrastructure Improvements*, electricity demand has been growing at 2% to 3% per year, but additions to the transmission system have been growing by only 0.7% per year. This has resulted in transmission lines that are congested in several regions of United States. Therefore, certain regions of the United States have very tight reserve margins and are very vulnerable both to high peak demand from periods of heat, and to unplanned outages of generation or transmission capacity needed to maintain imports.

Several factors have contributed to the lack of new transmission capacity. First, there is general consensus that siting new lines is difficult, needing approval of all states in which the transmission line will be located. However, the Energy Policy Act of 2005 mandates that the Department of Energy produce a list of "critical corridors" for transmission infrastructure by August 2006 and DOE is on track to meet this deadline. Furthermore, these corridors would have "fast track" siting approval process.

Second, some have argued that the current pricing mechanism for transmission is a deterrent for investors. For example, transmission development remains an area that competes for investment with distribution investments, which, regulated at the state level, often carry a higher rate of return than those allowed at the interstate level by the FERC. Consequently, transmission projects are often terminated. Third, many contend that regulatory uncertainty has added a level of risk that investors are unwilling to assume.

## **Regulatory Uncertainty is a Factor in Lack of Capacity**

The Energy Policy Act of 1992 introduced competition to wholesale electric transactions without a comprehensive plan to address reliability issues and the development of efficient wholesale markets. Therefore, approximately half of the states have passed legislation or had regulatory orders to introduce retail competition, each with its own set of rules for utilities to follow.<sup>1</sup> In addition, the blackouts of 2003 in the Northeast, Midwest, and Canada have highlighted the need for infrastructure improvements and greater standardization of operating rules. Many observers predict that until the electric power industry reaches a new equilibrium with more regulatory certainty, investment in transmission infrastructure and technology will continue to be inadequate.

## **Impact on Fuel supplies**

Experts have predicted another active hurricane season, which could periodically curtail Gulf of Mexico production of natural gas and oil. Although fuel deliverability problems are possible for limited periods of time (due to hurricanes, etc.), the larger immediate impact will likely be economic (e.g., higher electricity prices). However, the few new power plants that are built in the United States are gas-fired plants that are vulnerable to rapid increases in natural gas prices due to severe weather or scarcity of supply. According to NERC's summer assessment, natural gas-fired power plants will comprise more than 8,000 MW of the approximately 11,800 MW of generation being added this summer across the United States.

## **ISSUES TO BE ADDRESSED AT THE HEARING:**

- FERC's summer assessment and forecast by the regional ISOs for the affected regions;
- The steps FERC and the ISOs are taking to meet the challenges presented this summer;
- Actions taken by FERC and the ISO's to address supply and transmission problems over the long-term.

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<sup>1</sup> Twenty-two states and the District of Columbia have plans to allow for retail choice for electricity. According to the Energy Information Administration, in 1996, 10 percent of generating capacity was owned non-utility generators. In addition, to encourage competition, Maine and New Hampshire have required utilities to fully divest of either generation or transmission assets and California and Rhode Island have partial divestiture requirements.

**Witnesses:**

- The Honorable Joseph T. Kelliher, Chairman, Federal Energy Regulatory Commission
- Mr. Yakout Mansour, President and CEO, California Independent System Operator
- Mr. Mark S. Lynch, President and CEO, New York Independent System Operator
- Mr. Pete Brandien, VP of System Operations, ISO New England

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